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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,324	01/21/2000	Kristin Butcher	00P7423US	5692

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EXAMINER	
WOO, ISAAC M	

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 01/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/489,324	BUTCHER, KRISTIN	
	Examiner	Art Unit	
	Isaac M Woo	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-17,23-27,29 and 32-37* is/are pending in the application.

4a) Of the above claim(s) *1-3,18-22,28,30 and 31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-17,23-27,29 and 32-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 December 2002 has been entered.

2. The applicant amended claims 4, 23, 29 and 32, and canceled 1-3, 18-22, 28 and 30-31. And the applicant added new 34-37.

3. The pending claims are 4-17, 23-27, 29 and 32-37.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims are rejected under 35 U.S.C. 103(a) as being unpatentable over Avargues et al (U.S. Patent No. 6,104,701, hereinafter, "Avargues").

With respect to claims 4, 23, 29, 32, 34, 35 and 37, Avargues discloses, a router (col. 2, lines 22-67 to col. lines 1-15), computer readable medium, computer system and method for representing a given range of numbers with an optimized set of entries utilizing wildcards (col. 10, lines 1-10), the given range having a beginning number and an ending number (col. 7, lines 5-37), wherein the given range includes a first sub-range, a second sub-range, a third sub-range, and a fourth sub-range, the first sub-range having lower numbers than the second sub-range, which has lower numbers than the third sub-range, which has lower numbers than the fourth sub-range, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8),

representing all numbers within the sub-range (subinterval) as entries within the optimized set, see (col. 10, lines 59-63, (e.g., 325320, 325321, 325322, 325323, and 325324)); and

representing and optimizing the sub-ranges (subinterval, sub-subinterval) as a plurality of entries using wildcards within the optimized set, see (col. 10, lines 1-67 to col. 11, lines 1-8).

Avargues does not explicitly disclose the first, second, third, and fourth sub-ranges. However, Avarsues discloses to represent and optimize the subinterval, sub-subinterval using wildcards, see (col. 10, lines 1-67 to col. 11, lines 1-8). And the selecting or dividing the sub-ranges merely design choice by user. And Avargues

teaches 4 sub-ranges to represent the ranges of number using wildcards, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8). Therefore, it would have been obvious a person having ordinary skill in the art the time invention made to include the first, second, third, and fourth sub-ranges into the system of Avargues to represent the range of numbers as wild card. The wild card representation is saving the data storage to represent each sub-range of numbers.

With respect to claim 5, Avargues discloses that the sub-range includes a first portion of the given range that cannot be represented with wildcards, see (col. 10, lines 1-67 to col. 11, lines 1-8, Note: as disclosed above claim1, the subinterval (325321-325324 does not uses the wildcards representation).

With respect to claim 6, Avargues discloses that the first sub-range includes the beginning number of the given range to, but not including, a first number of the given range that is divisible by 10, see (col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 7, Avargues discloses that the first sub-range is empty when the beginning number of the given range is divisible by 10, see (col. 10, lines 1-67 to col. 11, lines 1-8, Note: if the range between 325321-325324 is divisible by 10, then it would be empty (no numbers)).

With respect to claim 8, Avargues discloses that the second sub-range includes the first number of the given range that is divisible by 10 to, but not including, a number of the given range that is representable with an integer times a highest power of ten, see (col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 9, Avargues discloses that the second sub-range is empty when the beginning number is the number of the given range that is representable with an integer times the highest power of ten, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 10, Avargues discloses that the third sub-range includes the number of the given range that is representable with an integer times the highest power of ten to, but not including, a last number of the given range that is divisible by ten, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 11, Avargues discloses that the third sub-range is empty when the beginning number is the last number of the given range that is divisible by ten, see (col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 12, Avargues discloses that the fourth sub-range of numbers includes the last number of the given range that is divisible by ten to the ending number of the given range, see (col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claims 13, Avargues discloses that dropping one or more zeros off the beginning number to form a counting value, wherein the number of dropped zeros equals a magnitude value; determining place where beginning and ending numbers first differ going from left- to right-most digits; truncating the ending number after the first differing digit to form a limiting value; incrementing the counting value and then adding a wildcard entry equal to the incremented counting value with addition of a number of wildcards equal to the magnitude value to the optimized set until the counting value equals the limiting value; and when the counting value is divisible by 10, dropping one or more zeros off the counting value and incrementing the magnitude value by the number of dropped zeros, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 14, Avargues discloses that the optimization of the third sub-range being accomplished by: dropping a number of zeros equal to the magnitude value off the beginning number toform a new counting value; truncating the ending number by a number of digits equal to the magnitude to form a new limiting value; adding a wildcard entry equal to the incremented counting value with addition of a number of wildcards equal to the magnitude value to the optimized set and then

incrementing the counting value until the new counting value equals the new limiting value; and when the new counting value equals the new limiting value and the magnitude value is not equal to 1, decrementing the magnitude value and appending a zero to the new counting value, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 15, Avargues discloses that the optimization of the third sub-range is accomplished by:adding a wild card entry equal to the beginning number truncated by a one's place digit with addition of a single wildcard character when the one's place of the beginning number equals 0 and a one's place of the ending number equals 9; and adding all numbers within the fourth sub-range to the optimized set when the one's place of the beginning number does not equal 0 or the one's place of the ending number does not equal 9, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8).

With respect to claim 16, Avargues discloses that each number within the given range represents a phone number, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 17, Avargues discloses that each number within the given range represents a router address, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 24, Avargues discloses that each number within the given range represents a phone number that are associated with a same information, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 25, Avargues discloses that the same information is a customer identification, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 26, Avargues discloses that each number within the given range represents a router address that are associated with a same information, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 27, Avargues discloses that the same information is a destination address, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 33, Avargues discloses that the numbers within the given range are telephone numbers, see (col. 2, lines 22-67 to col. lines 1-15).

With respect to claim 36, Avargues discloses that the computer system is in the form of a router, see (col. 2, lines 22-67 to col. lines 1-15).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brown et al (U.S. Patent No. 6,026,398) discloses the system for database data processing system, input search data is matched against an index of a database to determine database records which either closely or exactly match the input search data. The input search data is broken down into elements, and elements are converted to terms having a finite set of possible values. The Soundex function may be used to convert elements to terms. The terms are compared against an index of terms to determine which database records relate to the input search data. Through statistical analysis, match records are given a record weight which may be used to calculate how closely the input data actually is to each match record. The invention provides a fast and efficient way of accurately searching for data in extremely large databases, while not requiring precise input search data entry. The invention may also be used to compare or supplement one database against another.

Ng et al (U.S. Patent No.5,678,043) disclose the system for Records in the relational database are converted into ordinal numbers. The numbers are then sorted by a predetermined ordering rule. Next, for each record, the difference between the number and the preceding number is computed and this difference is then used to represent that record. Alternatively, for each record, the difference between the number and some other record's number that is within the same block is computed and the

difference is then used to represent that record. The compression technique results in highly compressed data that can still be handled by conventional relational database software for record insertion, deletion and other standard database operations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 308-6606 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JEAN M. CORRIELUS
PRIMARY EXAMINER

IMW
January 13, 2003